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09/881,235	06/14/2001	Akira Enokihara	5077-000055	7554

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EXAMINER

TAKAOKA, DEAN O

ART UNIT PAPER NUMBER

2817

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY

Office Action Summary

Application No.

09/881,235

Applicant(s)

ENOKIHARA ET AL.

Examiner

Dean O Takaoka

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 20, 2002 (paper no. 5).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

All previous drawing objections contained in the previous office action (paper no. 4 dated July 16, 2002) have not been addressed by the amendment filed November 20, 2002 (paper no. 5), therefore all previous drawing objections are maintained by the Examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 – 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection of claims 7 – 9, as contained in the previous office action (paper no. 4 dated July 16, 2002) has not been addressed by the amendment filed November 20, 2002 (paper no. 5), therefore the rejections of claims 7 – 9 under 35 U.S.C. 112 are maintained by the Examiner.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 – 11, and 13 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (4,639,699) for reasons of rejection contained in the previous office action (paper no. 4 dated July 16, 2002).

Claims 1 and 13:

Claim 1 has been amended to include "shielding case composed of a conductive material" and "a dielectric filled in the shielding case".

It is the position of the Examiner that the amendment of claim 1 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. By the rejection contained in the previous office action (paper no. 4 dated July 16, 2002);

Nishikawa et al. (Fig. 15) shows a resonator comprising: a columnar [dielectric] shielding case composed of a conductive material (conductive film 42); and a [shielding conductor surrounding the dielectric] a dielectric filled in the shielding case (dielectric 4 – where the dielectric is filled in the case, albeit not completely), the resonator using a resonant mode (TM mode – cols. 1, 2 all) causing generation of a current crossing a corner of the columnar dielectric (inherent in that the resonator resonates within all parts of the interior and inherently crossing the corner of the interior cavity), where the shielding conductor (42) is formed in direct contact with the surface of the dielectric (shown in Fig. 15).

Claim 13 has not been amended thus the subject matter is still anticipated by Nishikawa et al.

Claim 3:

Claim 3 has been amended to include "shielding case" (where the columnar [dielectric] shielding case is in a shape of a cylinder or square pole.

It is the position of the Examiner that the amendment of claim 3 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al.

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Nishikawa et al. shows the "shielding case being a cylinder (Fig. 16), thus anticipating the newly added limitation of claim 3.

Claim 4:

Claim 4 has been amended to include "case" where the shielding [conductor] case is a metallized layer formed on the surface of the dielectric.

It is the position of the Examiner that the amendment of claim 4 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. Nishikawa et al. shows the shielding case (32 – Fig. 14c or 42 – Fig. 15) being a metallized layer (conductive film – col. 9, line 43), thus anticipating the newly added limitation of claim 4.

Claims 5 and 10:

Claims 5 and 10 have not been amended thus the subject matter is still anticipated by Nishikawa et al.

Claims 6 and 14:

Claim 6 has been amended to include "**using a TM mode, the resonator**" (not indicated by amendment), "a case composed of a case body and a lid", "fixed therein", "an elastic layer sandwiched between the lid and the case body; and conductive foil sandwiched between the elastic layer and the case body, wherein lower and upper ends of the dielectric are respectively fixed to an inner face bottom of the case body and the conductive foil in contact therewith".

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It is the position of the Examiner that the amendment of claim 6 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. By the rejection contained in the previous office action (paper no. 4 dated July 16, 2002);

A resonator (Fig. 32) **using a TM mode, the resonator** comprising: a case composed of a case body and a lid (case 81 and lid 82), a dielectric (66) fixed therein (the dielectric shown as fixed in the case); [and a case for housing the dielectric, where part of the case is constructed of conductive foil and the conductive foil partly shields the dielectric electromagnetically] an elastic layer sandwiched between the lid and the case body; and conductive foil sandwiched between the elastic layer and the case body, wherein lower and upper ends of the dielectric are respectively fixed to an inner face bottom of the case body and the conductive foil in contact therewith" (where Nishikawa et al. shows an elastic rubber layer 151 between the lid (e.g. upper inner lid 62) and case body (comprising 82), a conductive foil 70 "sandwiched between the elastic layer and the case body" where conductive foil 70, surrounding the top middle elastic layer 151 is between the elastic layer 151 and case body 64, where 64 is disclosed as a dielectric case side portion – col. 12, line 42; wherein lower and upper ends of the dielectric are respectively fixed to an inner face bottom of the case body and the conductive foil in contact therewith, where the dielectric column 66 is shown fixed to the inner face bottom of the case 81 and conductive foil 70, thus the newly added subject matter to the claim is still anticipated by Nishikawa et al. .

Claims 7 – 9, 11 and 15:

Claims 7 – 9, 11 and 15 have not been amended thus the subject matter is still anticipated by Nishikawa et al.

Claims 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Nishiyama et al. (5,874,870)

Claim 12:

Nishiyama et al. (Fig. 7 in view of Figs. 4 – 6) shows a radio frequency filter comprising: a case body (13) and a lid (18, 19 – disclosed as metal based pc boards (col. 8, lines 1 – 3) where the Examiner defines the metal pc boards comprising the lid of the resonator case) respectively composed of a conductive material; a dielectric fixed therein (5), where a coaxial connector (10) is placed on an outer surface of the case body, a center conductor of the coaxial connector extends through an inner portion of the case body (shown in Fig. 7 where the coax connector extends within the case body), one end of a conductor probe is connected to the center conductor (the coax connector probe (11) shown connected to the center connector, the center connector shown attached to the coax connector and probe, further that it does not appear that the center conductor is clearly labeled or identified in the present invention, thus any coax connector including an attached probe would inherently meet the limitation), and another end of the conductor probe is connected to the lid (where the probe of Nishiyama et al. is shown attached to the metal film 18f, where 18 and 18m-f is defined by the Examiner comprising the lid; further in that the connection of the probe in the present invention shows the probe connected to the conductive foil (e.g. Figs. 8 and

12A) and not directly to the lid, therefore any indirect connection would meet the limitation. It is noted that if the limitation where a connection to the case body (e.g. 32 Fig. 18, Nishiyama et al. would still meet this limitation by the prior art shown in Fig. 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. and El-Sharawy (U.S. Patent No. 6,169,467) for reasons of rejection contained in the previous office action (paper no. 4 dated July 16, 2002).

Claim 2:

Claim 2 has been amended to include "the resonator using a TM mode".

It is the position of the Examiner that the amendment of claim 2 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. It is established that Nishikawa et al. discloses the TM mode (col. 1 all; further confirmed in the Applicant's arguments – page 6 with respect to claims 1 and 13);

Nishikawa et al. shows the resonator in the reasons for rejection of claim 1 above.

Nishikawa et al. shows the well-known resonator where the inner dielectric material (4) has a lower dielectric constant than the outer dielectric material (41 – col.

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10, lines 6-11) but does not show where the inner dielectric material (4) has a higher dielectric constant than the outer dielectric material.

El-Sharawy (Figs. 8 and 9) shows a similar well-known resonator where the dielectric includes a center portion and an outer portion covering at least part of the inner portion, and the dielectric constant of the center portion (62) has a higher dielectric constant than the outer portion (60 – col. 10, lines 48-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the well-known resonator disclosed by Nishikawa et al. with the well-known art-recognized equivalent resonator disclosed by El-Sharawy. Such a modification would have been a mere substitution of well-known art-recognized equivalent resonators since both Nishikawa et al. and El-Sharawy teach resonators with a plurality of different dielectric constants, thus suggesting the obviousness of the modification.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. and Liang et al. (U.S. Patent No. 5,805,033) for reasons of rejection contained in the previous office action (paper no. 4 dated July 16, 2002).

Claim 16:

Claim 16 has been amended to include "wherein each of the input-stage resonator and the output-stage resonator comprise:

a) a case body and a lid;

b) a dielectric fixed therein;

c) an elastic layer sandwiched between the lid and the case body; and
d) conductive foil which is sandwiched between the elastic layer and the case
body,
e) wherein lower and upper ends of the dielectric are respectively fixed to an
inner face bottom of the case body and the conductive foil in contact therewith".

It is the position of the Examiner that the amendment of claim 16 adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. The additional limitations of claim 16 are essentially identical to the added limitations of claim 6 above with the exception of minor word changes or deletions which do not affect the scope of the newly added limitations. Since the newly added limitations of claim 6 are shown to be anticipated by Nishikawa et al. above, the newly added limitations of claim 16 are also anticipated by Nishikawa et al. and Liang et al. contained in the previous office action (paper no. 4 dated July 16, 2002).

Response to Arguments

Applicant's arguments filed November 20, 2002 (paper no. 5) have been fully considered but they are not persuasive.

It is noted that the drawing objections and rejections of claims 7 – 9 under 35 U.S.C. 112 2nd paragraph, contained in the previous office action (paper no. 4) and dated July 16, 2002 have not been addressed by the amendment, therefore the drawing objections and rejections under 35 U.S.C. 112 2nd paragraph over claims 7 – 9 are maintained by the Examiner.

It is noted claim 12 has been amended. In view of the amendment, the rejection under 35 U.S.C. 112 2nd paragraph over claim 12 is withdrawn and a rejection based upon prior art has been applied necessitated by amendment.

Claims 1 and 13:

It is presented that the original claims 1 and 13 do not recite "an inner structure of the shielding conductor" but it is understood by the embodiment and figures and the claims are amended as such. While it is presented that the amendment more clearly distinguishes over the prior art of Nishikawa et al., it is the position of the Examiner that the amendment adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al. Nishikawa et al. shows "a columnar shielding case composed of a conductive material" (where conductive film 32/42 is columnar – Figs. 13 - 16); and a dielectric filled in the shielding case (dielectric 4 – where the dielectric is filled in the case, albeit not completely).

With respect to descriptions presented to the advantageous benefits of the present invention, the benefits are not commensurate to what is being claimed therefore the arguments are moot.

Claim 2:

Arguments are presented with respect to the functionality of Nishikawa et al. It is stated that Nishikawa et al. shows the center dielectric with a low center dielectric constant and a higher outer dielectric constant for the outer material. Clearly Nishikawa et al. discloses the equation $\epsilon_1 < \epsilon_2$ (col. 10, line 10), however this is based on an

assumption (emphasis added) by Nishikawa et al. (col. 10, line 6) therefore although Nishikawa et al. explicitly depicts one alternative, other alternatives are not precluded.

With respect to El-Sharawy, it is suggested that El-Sharawy may not show a TE mode resonator (e.g. "based on an assumption", "Even in this case, the resonance in the TE mode is assumed as disclosed in the specification"). El-Sharawy clearly discloses a TE mode dielectric resonator Abstract, col. 2, col. 9, col. 10, et al.). It is acknowledged by the Applicant that El-Sharawy shows the combination of the low center dielectric constant and a higher outer dielectric constant for the outer material. While it is argued that the resultant effects of the present application are different than that of El-Sharawy, it is the position of the Examiner that the effects between the present application and El-Sharawy are not commensurate to what is being claimed therefore the arguments are moot. Since both Nishikawa et al. and El-Sharawy show TE mode resonators, further that the dielectric constant arrangement of Nishikawa et al. is given only as an example and does not preclude other structures, it is the position of the Examiner that the combination of Nishikawa et al. and El-Sharawy is proper thus the limitations of claim 2 are obvious under the combination of Nishikawa et al. and El-Sharawy.

Claim 6:

It is presented that claim 6 is amended to incorporate original matter of claims 6 – 9, previously anticipated by the prior art of Nishikawa et al. The structure and functionality of the current application is highlighted, however it is the position of the

Examiner that the amendment adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al.

Claims 11 and 15:

The structure and functionality of the current invention is highlighted, however it is the position of the Examiner that the functionality of the current application is not commensurate to what is being claimed and that the structure of the current invention is anticipated by Nishikawa et al., thus the amendment adds no patentable subject matter to the claim and is still anticipated by Nishikawa et al.

Claim 12:

The previous rejection under 35 U.S.C. 112 2nd paragraph (no applied art) is withdrawn and a new rejection based upon prior art has been applied necessitated by amendment.

Claims 14 and 16:

It is presented that "when amended claim 6 is recognized as reciting patentable subject matter, claims 14 and 16 should also recite patentable subject matter over the cited references."

Claims 6, 14 and 16 have been rejected by the Examiner for reasons above and the amendment adds no patentable subject matter to the claims, thus claims 14 and 16 and are still anticipated by Nishikawa et al.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dot
January 13, 2003



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800